Using the Web-based Map

Idaho Department of Water Resources

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Geographic Information Systems – Internet Mapping
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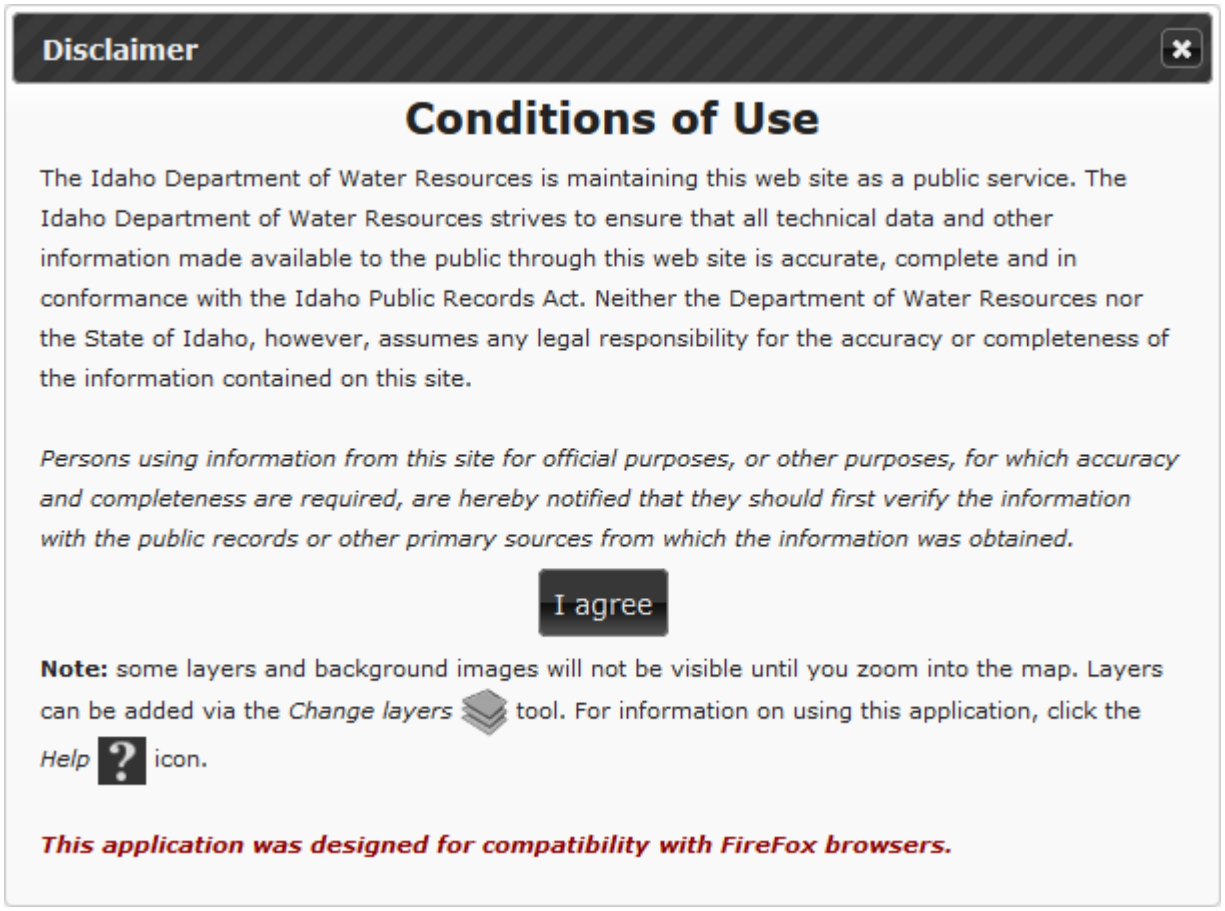
Welcome

The Idaho Department of Water Resources provides this interactive web mapping application as a way for the public to easily locate and view data from our databases. In some cases, the data can be downloaded. Currently, this interactive Map allows users to access the data from most of the Department's business processes. The information served by this map covers water rights and adjudication, well drillers' Logs, the Underground Injection Control program, floodplain management, the Environmental Data Management System (EDMS) database, geothermal resources, groundwater levels, the Hydrologic Model and the Idaho Water Resource Board.

This web mapping application does not require any GIS experience or any software other than your internet browser. As with all of the information provided by the department via the internet, you will be asked to acknowledge and agree to the site's ***Conditions of Use.***

Getting Started

Use your browser to navigate to the following address: http://www.idwr.idaho.gov/Map. The web-page will show this disclaimer:



As stated in the ***Conditions of Use***, this application was designed to be used with the Firefox browser. It is usable with most versions of Internet Explorer (IE), back to v7. It has been tested on Safari and Opera. However, the user interface may be distorted by a non-Firefox browser. Additionally, some capabilities of this application are not available in some versions of IE.

The Department of Water Resources provides access to much of its data through internet applications. Tabular information concerning water rights, groundwater quality, geothermal resources, etc. is available through this map. Many of the map services (groups of GIS layers) shared on this map link to query-tools which let you view and/or download detailed information about the Departments business processes.

The information served by this map covers water rights and adjudication, well drillers' Logs, the Underground Injection Control program, floodplain management, , geothermal resources, groundwater levels, the Hydrologic Model and the.

You can request that the map show a specific IDWR business process by adding one of the following project names to the main map address. For example, http://maps.idwr.idaho.gov/edms will set the map so that the primary map service is EDMS and the active layer is "EDMS wells with samples." You will see EDMS well-sites and be able to query those records for water quality data.

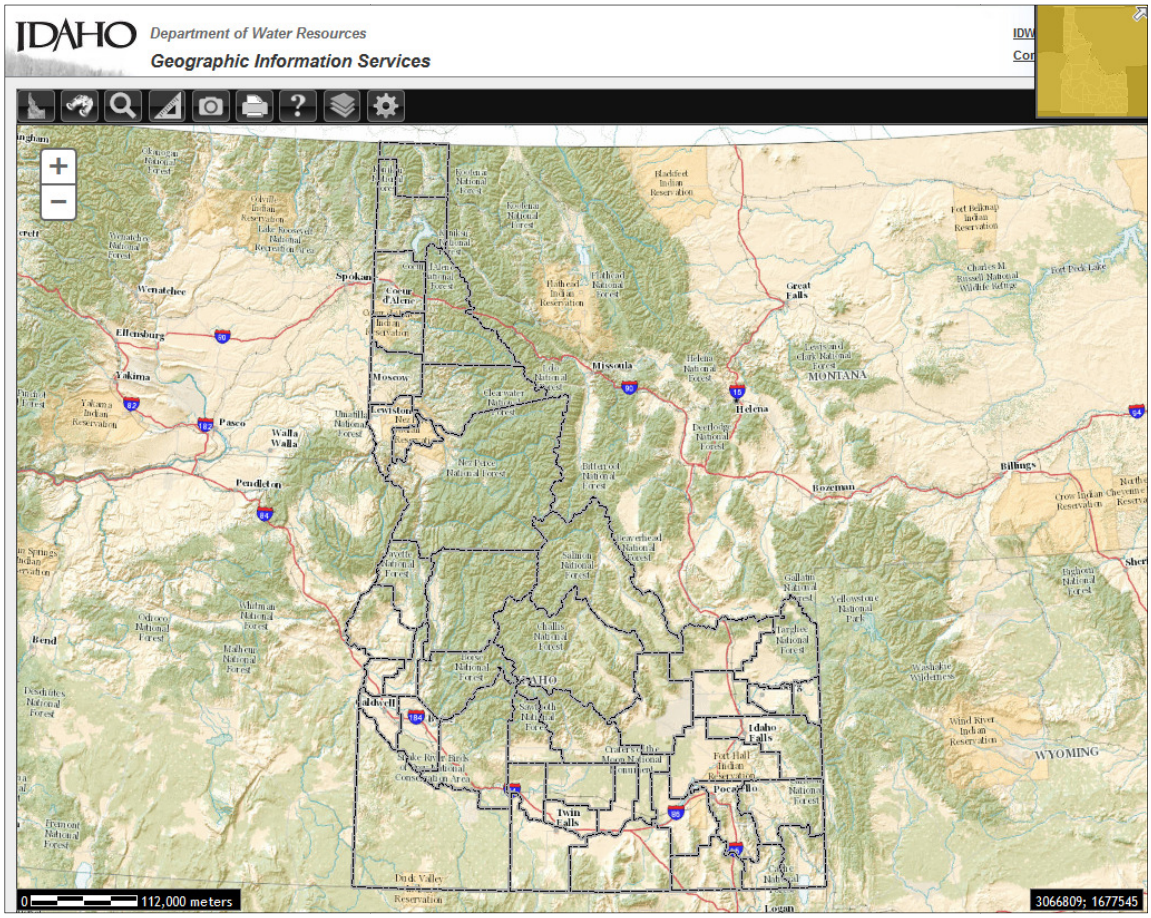
waterrights	Water rights, permits, applications; adjudication claims and recommendations
edms	Access water quality data stored in the *Environmental Data Management System*
gwm	Groundwater monitoring and protection, well construction
geothermal	Geothermal resources – wells and springs
hydrologicdata	Hydrologic data used to support modeling, planning and decision making
accounting	Surface water rights accounting model
waterboard	The programs, projects and planning efforts of the *Idaho Water Resource Board*
espa	Used to view the status of hydrologic modeling on the Eastern Snake River Plain

The queries and tools accessed through this map vary, depending on business process. For water rights layers, the *water right report* and the *Document Search Results* can be run. Other applications, such as water rights accounting and EDMS, provide access to large amounts of historical time-series data. Regardless of the initial address you use, you can add other map services in order to explore the relationship between data for the IDWR's various business processes.

The terms "dialog" "pop-up" or "window" are used interchangeably within this document. The terms "map service" and layer both refer to GIS layers represented on the map; a map service is a collection of closely related layers. Please see ***Appendix C – Glossary***, at the end of this document, for an explanation of the GIS and internet mapping terms used in this document.

Using the Map

On first use, the map will show the entire state of Idaho. Depending on whether you request a specific view or map-project, the map will look similar to this.

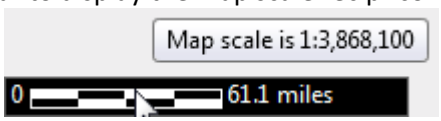


You must use the Navigation Tools to position the map and magnify it in order to view your area of interest. You can display the entire state of Idaho within the on-screen map or magnify the view so that you can see just a few acres. Displays showing the size and location of the area shown on the map. The map-scale and map-coordinate indicators are located at the lower corners of the map.

Map Scale Indicator

This example shows (appoximately) how many miles there are in one map inch. The defaul t display will show meters.

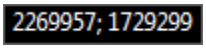
Hover over the scalebar to display the map scale recipricol.



Map scales within this document are referred to in language like “until the scalebar shows a value less than 2,450 meters.” Using that example, for desktop browsers, the actual map scale would be 1:100,000 (displayed by hovering over the scalebar). The relationship varies by device.

Map Coordinate Indicator

The coordinate indicator displays the position of the mouse cursor on the map. The default coordinates are IDTM NAD83.

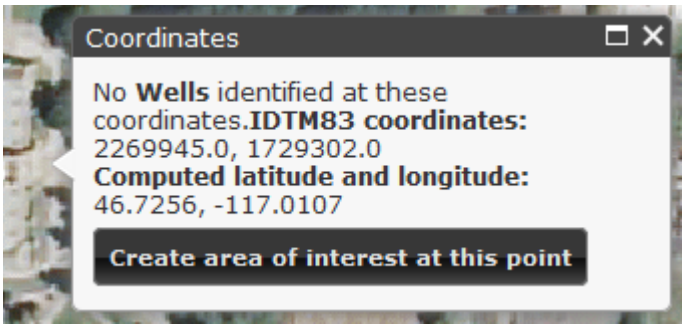


The units used to display the scale or coordinates can be changed using the Options Menu.

Displaying Coordinates of a Point

The map coordinates of the mouse cursor are shown in the lower, right corner of the map, as explained in the previous section. You can also click on any point on the map to display the coordinates of that point. You can highlight the coordinates (or any other information) shown in the dialog in order to copy them and paste them into another document.

If you do not have an *active layer* selected you will see the IDTM coordinates and the latitude and longitude.



If you have set an active layer to identify features on the map, but click a point where no features from the active layer are present you will see an error message – e.g. "No Wells identified at these coordinates."

The only time you won't see this (or similar) display is when you have clicked on a *feature* belonging to the *active layer*. In that case, you will see the table of records for data related to that *feature* (as shown in the discusson on the *identify tool*).

Navigation Tools

Within the interactive map you can display the entire state of Idaho or magnify the view so that you can see just a few acres or city blocks. The tools used to resize and reposition the on-screen map are called navigation tools. The terms "zoom in" and "zoom out" will be used througout this document to mean to view a smaller portion of the earth or a larger portion, respectively. This application has no visible navigation controls except for the *zoom slider, which is positioned on the map at the upper, left-hand corner.*

Zoom Slider: Used to double the scale of the map or reduce it by half. Click on the upper button to see more detail. Click on the bottom button to view a larger area.

Resizing the Map

Zoom In – use any of the following methods:

- Click the upper arrow on the *Zoom Slider.*
- Press the *plus sign* (+) on the keypad.
- Roll mouse-wheel forward.
- Hold down the ***Shift*** key, click on the map and hold the button down while dragging the mouse cursor to outline the area you wish to see.

Zoom Out – use any of the following methods:

- Click the lower arrow on the *Zoom Slider.*
- Press the *minus sign* (-) on the keypad.
- Roll mouse-wheel backward.
- Hold down the ***Ctrl*** and ***Shift*** keys, click on the map and hold the button down while dragging the mouse cursor to outline an area of the map. If you cover a large area, you will be zoomed out a little bit; if you cover a small area you will be zoomed out a lot.

Moving the Map

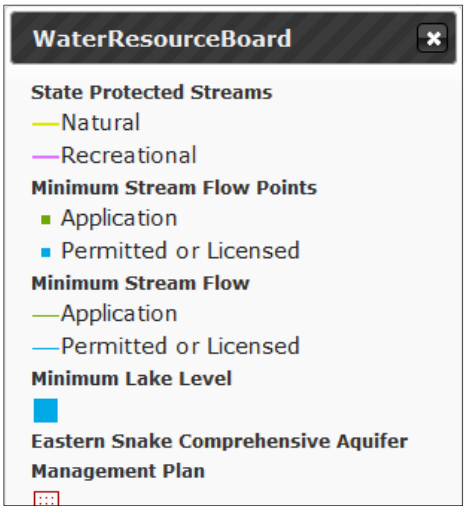
Pan tool: click on the map, hold the button down and drag the cursor to a new position. Apple Mac users can use the ***Command*** key in the same manner that ***Ctrl*** key is used on Windows PCs.

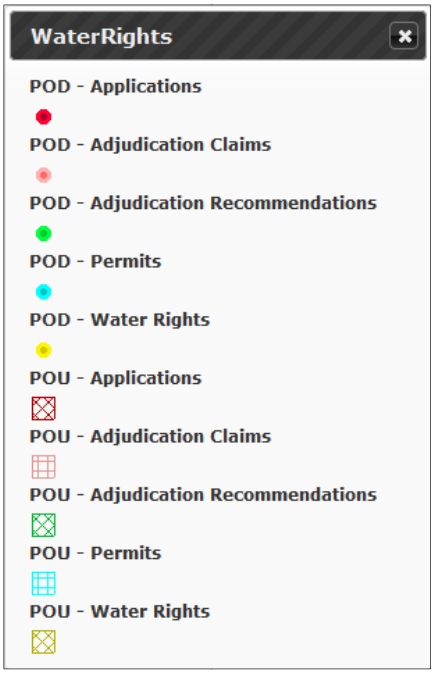
The Progress Bar

Although not a "tool," the progress bar appears when you resize the map, add layers or perform queries and tells you when the application is waiting for information from the server.

The Legend

The legend displays a list of all of the layers within a map service and the graphics or symbols which represent them. The content of the legend shows only what is available in that map service, as shown in these two examples.





The Toolbar

The toolbar, located above the upper, left-hand corner of the map, holds all of the tools you need to find, select and view details for features from the various layers on the map.

Identifying features

The default action, when interacting with the map, is to identify what is present at a location – there is no need to click an *identify* tool button. Click on any feature in the *active layer* to display the attributes of the record at that point. See how to set the active layer in the section entitled ***Identifying Features from in Active Layer.*** As discussed in the section entitled ***Displaying Coordinates of a Point,*** if you click on the map away from any features, the IDTM coordinates and latitude/longitude for that point will be displayed in a pop-up window.

Show entire state

The *show entire state* tool will set the map extent so that the entire state of Idaho is visible.

Search by query

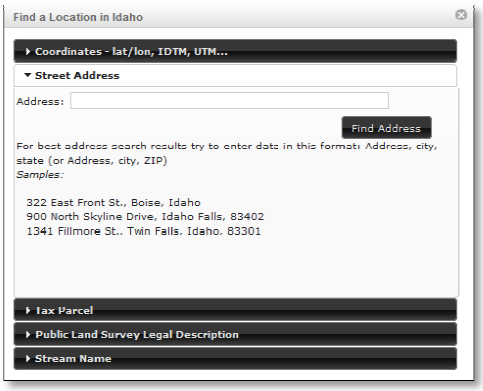
In addition to a strict database query, the *search* tool allows you to find features using queries like "what water rights are in this polygon," "what wells are within a one-mile radius of this water quality monitoring site," "where are the sites associated with these EDMS well IDs."

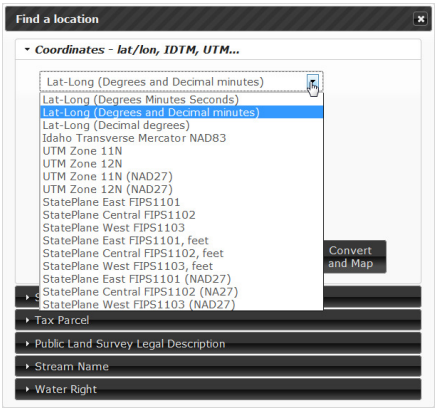
You can search selected fields for user-specified text, by querying a value or range of values for a specific field, by using a list of identifying names or by using geometry (point, line or polygon) to highlight features from a given layer. The results of the search are presented in a table that allows you to see some of the key attributes of the selected features. If the layer you are querying is linked to an advanced query, you can use the search-results to submit a request to that application. Please read the discussion in the section entitled ***Appendix A – Searching for Features***.

Find a location by…

The *find* tool is used to find a location in Idaho using various methods, including entering a northing/easting in one of a variety of coordinate systems.

Finding a street address, tax parcel or stream can only be accomplished using this tool.





You may zoom into a portion of Idaho using any of the following options:

- Map Coordinates, such as latitude/longitude, IDTM, UTM, etc.
- Street Address or place name
- Tax Parcel number
- Public Land Survey (Legal description)
- Stream name
- Water rights number

Other Tools

Measure length or area

The *measure* tool is discussed in the section entitled ***Measuring Distances***.

Create an image from the map

Also known as the *capture* or *screenshot* tool, it allows you to save a picture of the current map. It is useful for making electronic "slide presentations." See ***Saving or Printing the Map***.

Print the map

The *print* tool creates an 8 ½" x 11" map, complete with legend, scale-bar, creation date and title. Set the browser to use the same orientation as your output, landscape or portrait.

Change layers

The *change layers* tool allows you to add layers to the map, turn them on/off, change their transparency and many other operations. See ***Working with Layers.***

Help

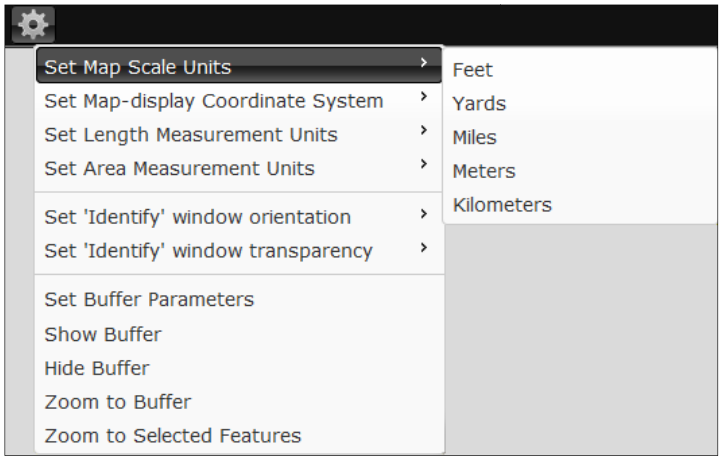
The *help* tool displays this document in another browser window.

Options and settings

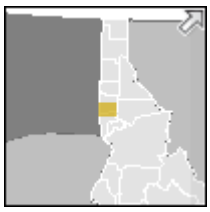
The options and settings menu give you a way to change the units displayed or used on the map. You change the units for:

- scalebar
- coordinate display
- length measurements
- area measurements

You can change the way the results from using the 'Identify' tool are displayed and specify how the program uses buffers to access features or areas of the map that you previously selected.



The Overview Map



The overview map shows the portion of Idaho you are viewing in the main map window. Normally, you will be viewing a very small area which will be shown as a point on the overview map.

If the area you are viewing is quite large it may be displayed as a rectangle on the overview map, as is the case in the example.

Working with Layers

The IDWR is home to an extensive Geographic Information System (GIS). This GIS allows the department to store, maintain and analyze data in support of the Idaho Water Resources Board and pertaining to the responsibilites of the IDWR. The data are used to plan for, allocate and monitor water uses throughout the state.

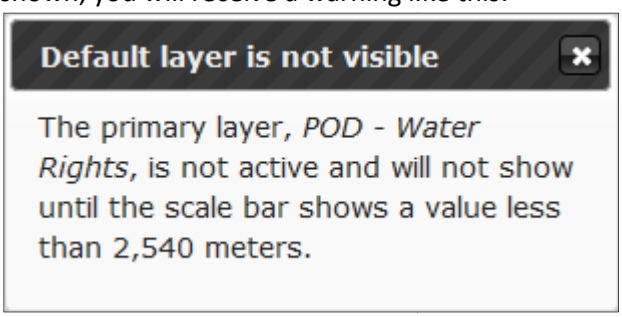
This interactive mapping application was designed to allow users outside the IDWR to use the GIS. Depending on how you navigated to this web page, the layers shown on the map may be sufficient to answer your questions. If not, you must click on the *Change layers* tool button, to open the "Map Contents" dialog.

As explained in the section entitled ***Using the Map***, the initial map may be pretty boring. You should see a white map showing the outlines of all of the counties in Idaho. However, as you zoom into the map and see a smaller area, other layers will show. Several of our GIS layers have so many features that they completely fill the map with overlapping symbols at small scales.

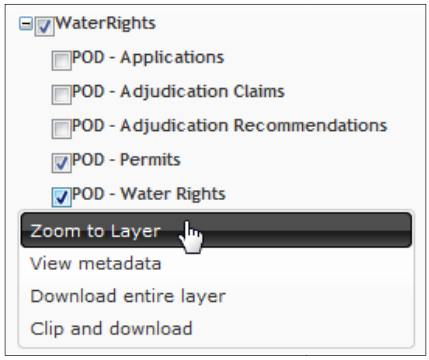
Blank Map Warning

Your initial map may be essentially blank or show only a background image. You will be warned if the primary layers for a business process are not visible on the initial map. For instance, the **POD – Water Rights** layer (part of the **WaterRights** map service) is not visible until you zoom in to where the scale is, at most, 1:100,000. For desktop browsers, the map scalebar at the lower left corner of the map will show something like "2,540 meters" (or "1.6 miles" if you have changed the map scale units). If the map is already centered on your area of interest open the ***Map Contents*** dialog. Right-click on the **POD - Water Rights** layer and click ***Zoom to Layer*** to zoom the map so that the layer is visible. Do not confuse this with a similar option, available when you right-click on a map service, labeled "Zoom to Map Service." That option will set the extent of the map to show all of the features from all of the layers in that map service, which is usually the entire state.

If the primary layer for your map application is not shown, you will receive a warning like this:



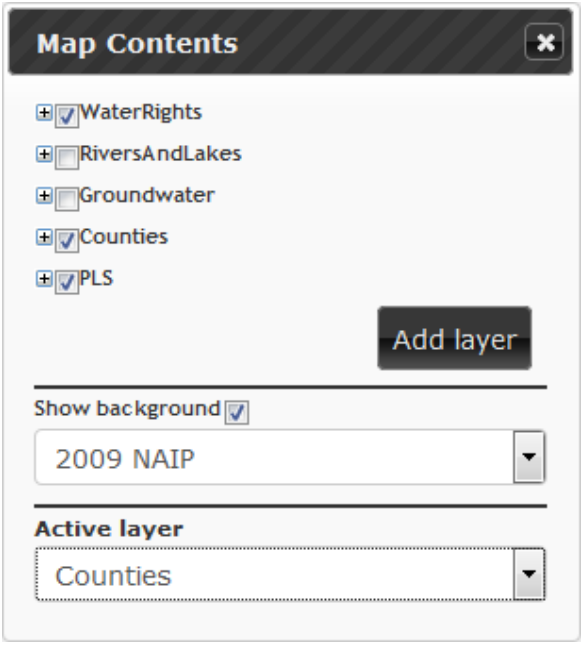
Use the ***Map Contents*** dialog



Using the "Map Contents" Dialog

The ***Map Contents*** dialog is displayed when you click the ***Change layers*** tool icon. Not all layers will be visible on the initial map. In fact, you may see only the county boundaries.

The initial layer list shows that the **WaterRights**, **PLS** and **Counties** map services should be visible. But, since the *WaterRights* map service is not visible until the map scale is larger than 1:100,000 (the map-scale on a desktop browser will display 2,540 meters), none of its layers are visible. Likewise, since the *Show background* checkbox is checked and the **2009 NAIP** is selected we expect to see a background. That layer is not available until the scale is at least 1:300,000 (one inch equals 7,620 meters). See ***Changing Backgrounds***.

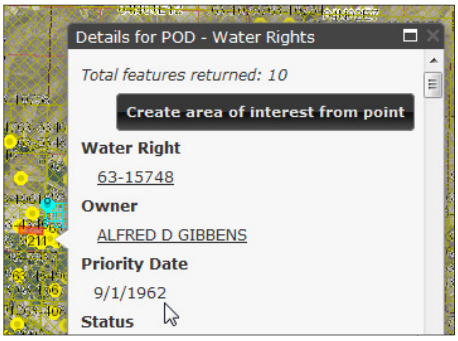


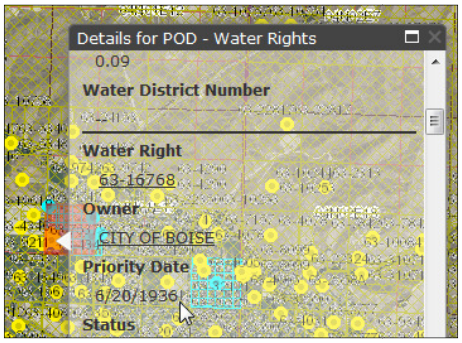
The Counties layer is the only one in the **Active layer** drop-down list because no other layers are "queryable" at the scale of the initial map. See the section entitled ***Get Closer*** to see how the map scale affects what layers are visible on the map.

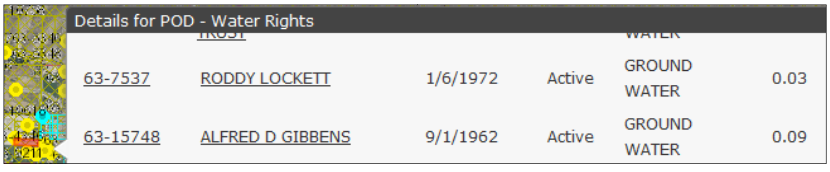
Identifying Features from in Active Layer

The active layer is the feature layer that will be queried when you click on the map. The "Identify" or details window shows the attributes of the clicked-feature; the ouline of the window points to the feature. In the example, 10 water rights are tied to that POD (point of diversion). As you hover the cursor over a field in the record, the place-of-use associated with that right is highlighted.

The first record is related to a very small parcel of land, which is entirely visible. The second record shows a full quarter-quarter section of the PLS, a portion of which is occluded by the "Identify" window. Set the transparency of the "Identify" window to semi-transparent so that the full extent of the place-of-use is displayed. The orientation and transparency of this window can be changed by clicking on the ***Options and Settings*** tool icon.





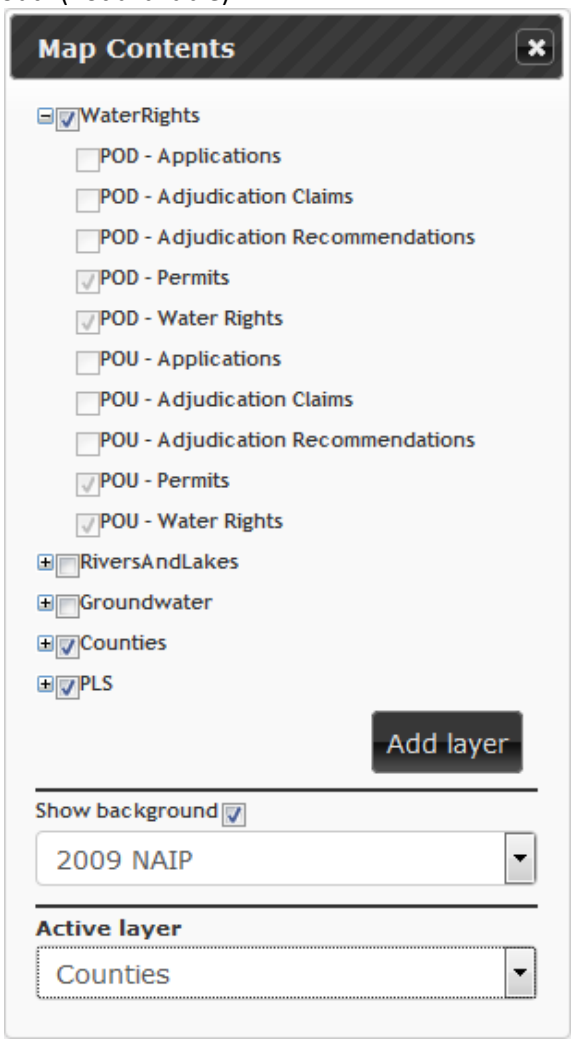


Example of the "Identify" window shown in landscape mode.

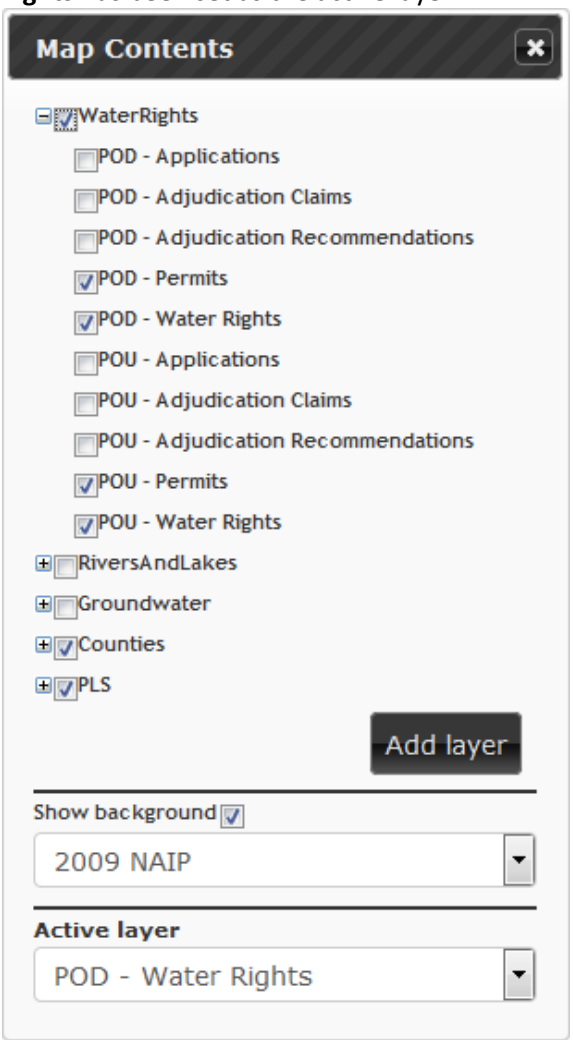
Get Closer

In order to view the data you are interested in, you may need to select a smaller portion of the state by zooming into the map (see the ***Navigation Tools*** section). Using the **WaterRights** map service as an example, zoom in so that the map-scale is between 1:100,000 (the scale at which the **WaterRights** map service is turned on) and 1:1,000 (when the NAIP background image is turned off). If you zoomed to an address, tax parcel, etc., you should see points or polygons which define the water rights layers. The ***Map Contents*** dialog changes due to scale-change.

Initially, the ***Map Contents*** dialog showed that the checkboxes for all **WaterRights** layers are "grayed out" (not available).



At a larger scale, all of the **WaterRights** map service layers can be made visible. **POD – Water Rights** has been set as the active layer.



The example shows that the active layer has now been set to **POD – Water Rights**, which belongs to the map service (a group of layers) named **WaterRights**. The **WaterRights** map service, contains ten layers. Other map services may contain as few as one layer or as many as twenty.

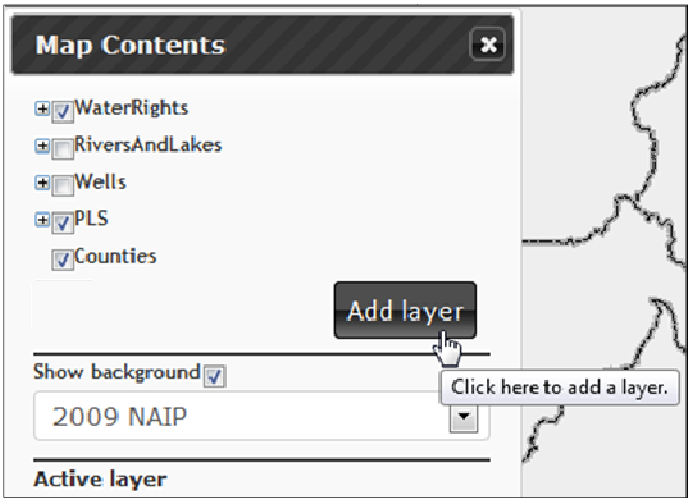
Map services contain multiple GIS layers, grouped by function or IDWR business process. The ***PLS*** map service, for example, contains three layers – townships, sections and quarter-quarter sections.

As shown in the figures above, the **WaterRights** map service has five layers which show where the water comes from, a well, canal, etc., called "points of diversion." It has five layers which show the area where the water is used, called "place of use."

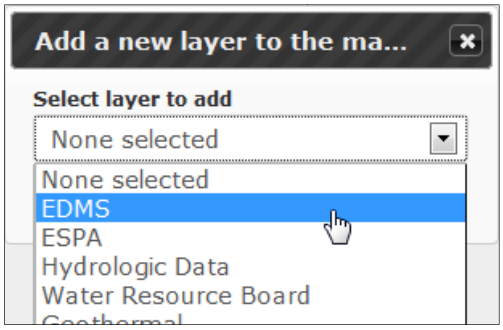
Adding Layers

The map services included in the initial map were selected by the way you arrived at the web-page. If you arrived using a link on an IDWR web-page, the list of map services is tailored to the context of that page. You may add map services in order to see more layers from our GIS.

When you click on the Add layer button, you will see a list of map services offered by thi s application.



Select the layer you wish to add.

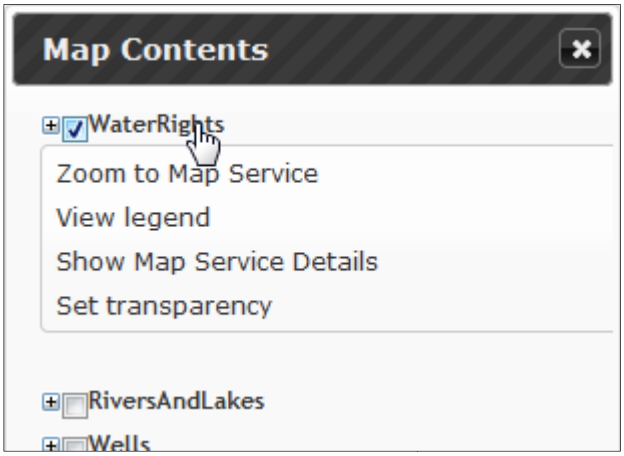


Getting Information about the Layers

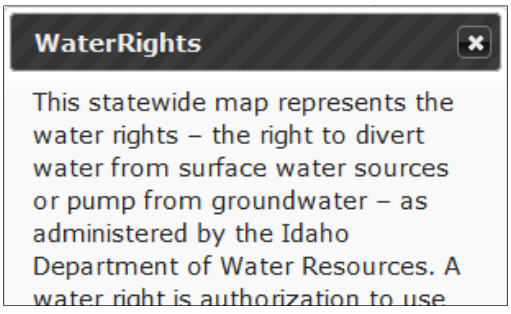
This application uses context-menus to allow the user to view details about the map services or their layer-collections. This menus are not normally visible.

Map Service Context Menu

The map service context menu pertains only to functions provided on entire map services. To access this menu, right-click on a map service [Apple users must use Ctrl-Click].



Besides viewing the map service legend and setting transparency for all layers in the map service, you can see a detailed description of the map service.



Viewing the Map Service Legend

Click on the map service context menu, then click *View legend* to display the legend for the specified map service. Examples of map service legends are shown in the section entitled ***The Legend***.

Setting the Map Service Transparency

Click on the map service context menu, then click *Set transparency* to set the transparency for the specified map service. All layers in the map service will be modified in the same way.

Zoom to Map Service

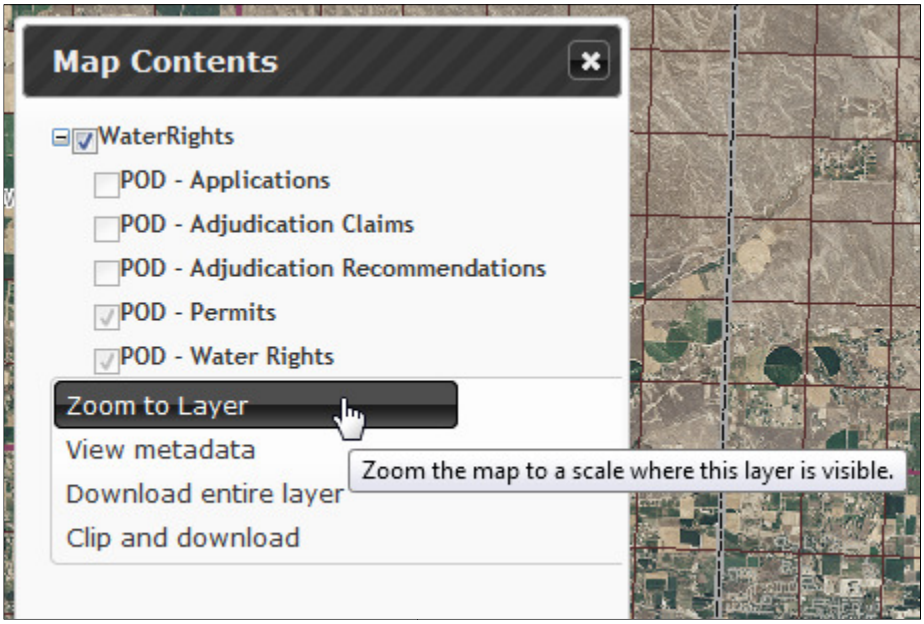
Zoom to Map Service sets the extent of the viewable map to the extent of the map service. This is useful when the map service covers an area which is much smaller than the state. It is not useful for map services such as **WaterRights**, **Wells**, **PLS**, etc. – if you intend to zoom to an extent where a particular layer is visible, use the ***Zoom to layer*** function on the Layer Context Menu.

Layer Context Menu

This context-menu allows the user to get specific information about a layer, or download the layer.

Zoom to Layer

The *Zoom to Layer* tool will set the map extent, centered on the current center of the map, to an extent where this layer is visible. In the case of **POD – Water Rights**, the layer becomes visible at a map scale of 1:100,000. Note, the "gray" checkbox indicates that the layer is not currently visible.



View metadata

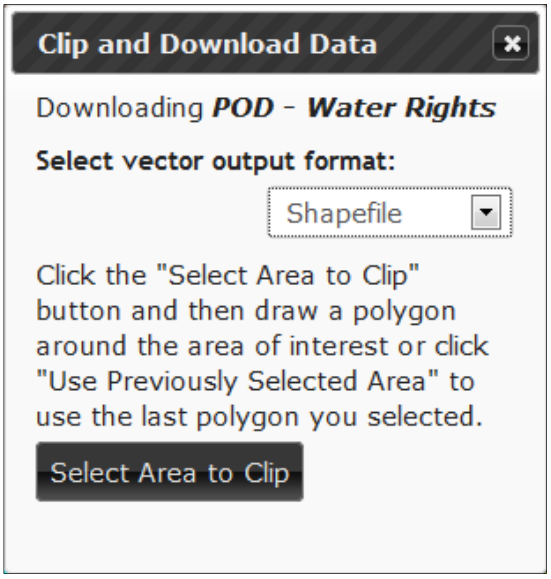
The *View metadata* tool is a link to metadata about the GIS layer. The metadata, if available, gives you a description of the layer, when it was created and who created it.

Download entire layer

The *Download entire layer* tool is a link to a page where you can download the GIS layer as a shape-file.

Clip and download

The *Clip and download* tool allows you to draw a polygon around a small portion of Idaho and create a shape-file of all of the features in the layer you choose to download.



In addition to shape-files, you can save the output as a file-geodatabase or in a format suitable for AutoCAD.

When you click *Select Area to Clip* the draw polygon tool will be activated. Follow the on-screen tooltips.

When you have finished the polygon, you will get a popup window. The contents of this popup is dependant on which browser you are using.

It will ask if you wish to open the file or save it.

If the layer you wish to clip and download is not visible on the map you will get an error message stating that you cannot download it without making it visible.

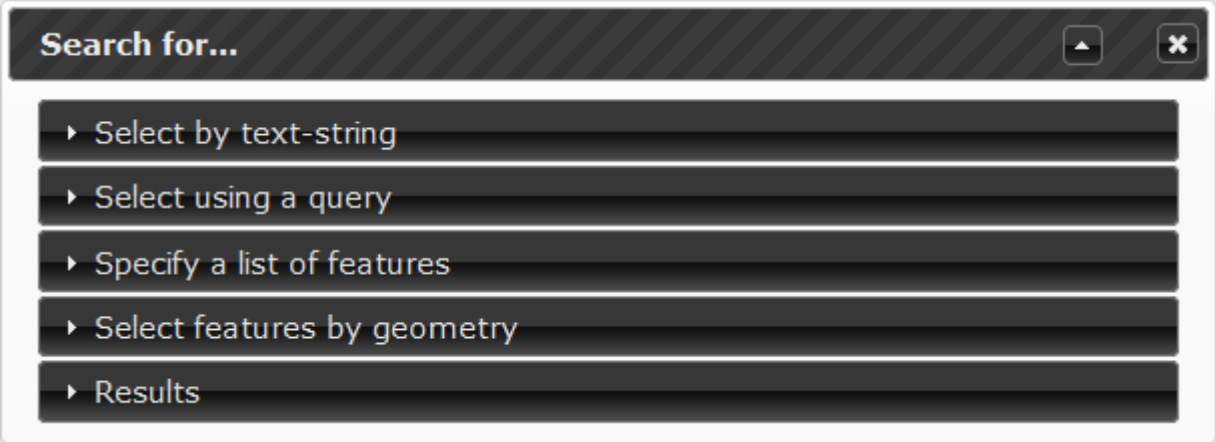
Note: if you do not make a selection from a context menu within five seconds, it will close. This is done because there is no way to manually close the menu, other than making a selection from it. If this happens, just right-click the appropriate button/text and try again.

Errors

If you experience errors using the Map Contents dialog, please refer to the section entitled ***Handling Errors***.

Searching for Features

In order to request information from the IDWR databases, you must select the features you wish to view. Click on the ***Search*** tool, located on the toolbar, then click on the specific search tool you wish to use. The *search* tool provides three search-functions which perform database searches and one function which performs a spatial search.



Select by text-string – find features using text. The user cannot select which fields to search.
Select using a query – find features by composing a query by supplying values for one or more fields.
Specify a list of features – enter a list of unique identifiers, such as SiteID, Metal tag number, etc.
Select features by geometry – use geometry (point, line or polygon) to select and highlight all features from a given layer.
Results – display a spreadsheet-like grid containing details for all of the records returned from the search, regardless of the function used.

The layers (and attributes) available to the search tool vary by map service. In general, if a GIS layer is present in the application and has been developed by the IDWR, its records can be searched. The examples below use **POD - Water Rights** or **EDMS** layers to demonstrate the use of the tools.

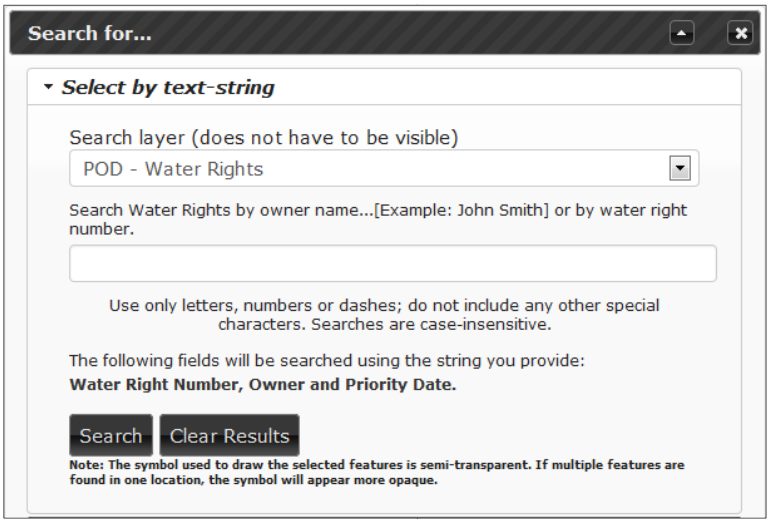
Point-Symbols Used to Highlight Features

The representation of a selected symbol on the map depends on the way it is normally drawn.

	POD – Water Rights	EDMS Sites
Symbol in legend ("normal")		
Selected feature		
Cursor is hovering over the point		

Search by Text String

Enter text or numbers without quotation marks or any other punction. All searches are case-insensitive.



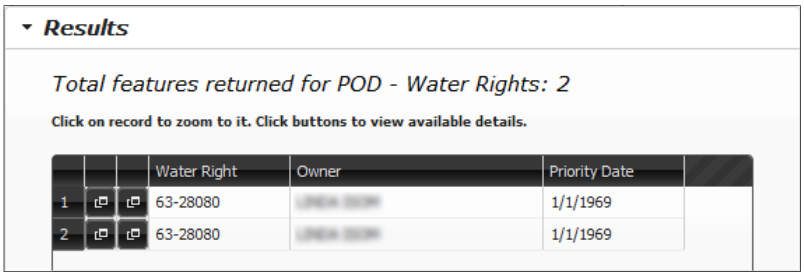
Search by text-string is the default search tool. It is active when you open the search window for the first time. Select a layer to search and then enter (as the tooltip says) the numbers or character string you wish to search for.

The example and the list of fields which will be searched are specific to the layer selected – in this case, only the Water Right Number, Priority Date and Owner fields will be searched.

Viewing Results

Searching for the number **28080** yields two *features* from the POD – Water Rights *layer*.

If those *features* are not represented within the current map *extent*, click the row.



Click on one of the rows in the results grid and the map will be zoomed to, and centered on, the feature from that row. Highlight the actual point of diversion associated with water right 63-28080, using the symbol shown on the previous page, by hovering over a row in the results-grid.

- The buttons shown at the beginning of each row are hyperlinks to web pages that show detailed information about that feature. The number of buttons depends on the layer being searched.

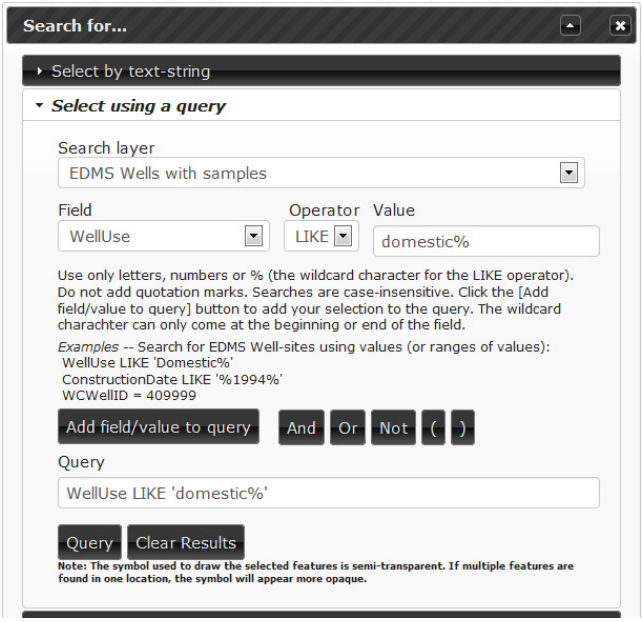
The information available in those hyperlinks depends on the layer being searched; the links may point to web pages at other agencies, USGS, DEQ, etc. In the case of water rights, the first link displays the water right report for that record; the second link performs a search of all documents associated with that water right. Well-construction logs are linked from the *Wells* layer, surface water gage information provided by the USGS is linked from the ***Surface Water Hydrologic Data*** layer.

Search Using a Query

You can search specific fields by specifying a single value or range of values. The field-list presented changes when a new search layer is selected. You can query most active layers on the map.

Not all fields in the table will be available to query. For example, some dates are stored in the database as a string, e.g. “10/20/10” (mm/dd/yy), which provides no ‘queryable’ information. Where dates are stored in binary, or formatted like “20101020” (yyyymmdd), those fields will be made available for query.

Compose the query by selecting a *Field* and an *Operator*, then supplying a *Value* to be searched. Layer-specific examples are provided on the form.

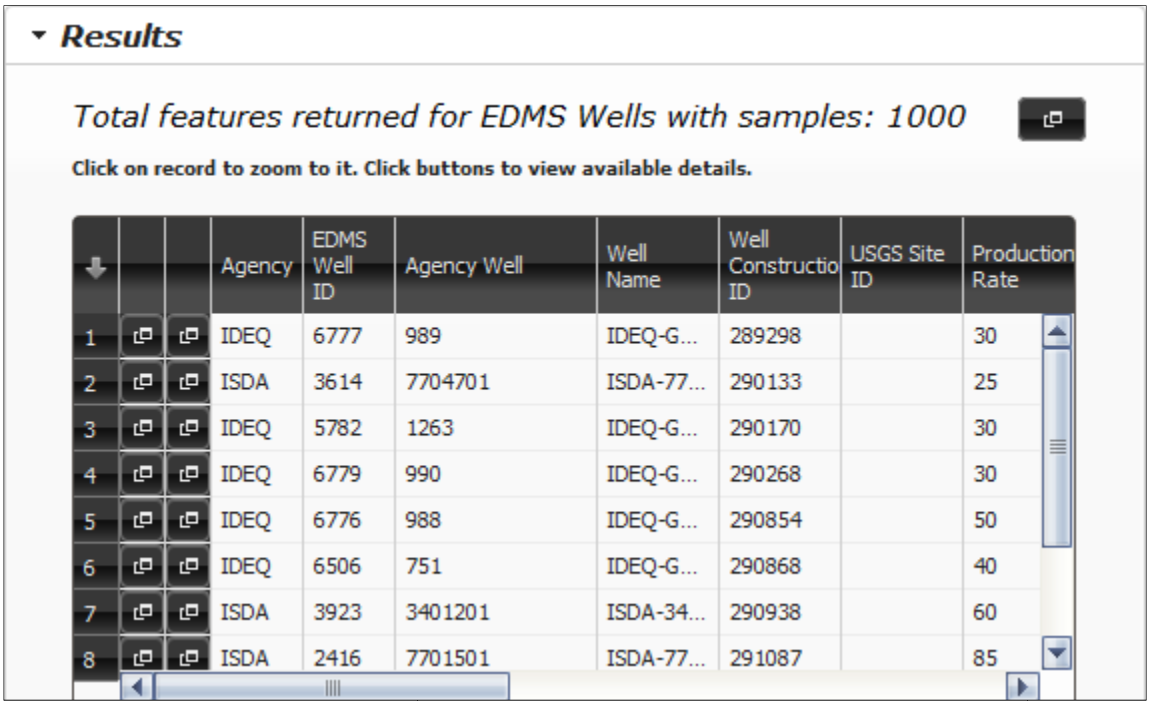


The only non-alphanumeric characters allowed in the value box are the wildcard (%) and the dash (-).

Do not insert apostrophes or quotation marks in the *Value* text-box.

Click the *Add field/value to query* button to add your choices to the contents of the *Query* text-box. Note that the quotation marks were automatically added to the **WellUse** value because it is stored as a text-string in the database. If you wish to make a compound query, click one of the *And/Or/Not…* buttons, then repeat the steps to add to the contents of the *Query* text-box.

If you are familiar with the field-names, you do not have to use the drop-down lists to compose the query; you can fill the *Query* text-box by typing or pasting characters into it.



	Agency	EDMS Well ID	Agency Well	Well Name	Well Constructio ID	USGS Site ID	Production Rate
1	IDEQ	6777	989	IDEQ-G...	289298		30
2	ISDA	3614	7704701	ISDA-77...	290133		25
3	IDEQ	5782	1263	IDEQ-G...	290170		30
4	IDEQ	6779	990	IDEQ-G...	290268		30
5	IDEQ	6776	988	IDEQ-G...	290854		50
6	IDEQ	6506	751	IDEQ-G...	290868		40
7	ISDA	3923	3401201	ISDA-34...	290938		60
8	ISDA	2416	7701501	ISDA-77...	291087		85

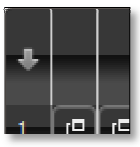
The number of records returned to the client is limited to 1000, as is the case in the example above (a mixture of wells from IDEQ and ISDA). If you wish to download all of the records in a GIS layer, the shape-files are available from our Geographic Information Systems Data page. A link to that page is available in the *Layer context menu*.

Hiding the Search Tool Dialog

Click the "collapse" button on the title bar to minimize the *search dialog*. When the dialog is minimized the direction of the arrow is reversed. The dialog can be moved or minimized so that it does not interfere with the operation of the map – such as drawing a polygon to select features.

Downloading Feature Attributes

If you wish to download the detailed information for each of the features you selected, for inclusion in a spreadsheet or document, you can download them by clicking the arrow shown here.



The feature-attributes shown in the table must be downloaded using the "Download these features" button – at the top, left corner of the grid. This button packages all of the attributes for all of the records in the ***Results*** table and prompts you to save them to your personal computing device.

You cannot select the records in the ***Results*** table and cut/paste them to another application; you must download the CSV-file to get the contents of one or more fields/records.

As stated in the ***Conditions of Use***, these data are provided as a public service. Although most feature datasets are updated nightly, the information you get from this download may not be the latest copy or may otherwise differ from the version being used by the IDWR. Further, some formatting of information may be necessary. The example below illustrates how to make numeric values usable.

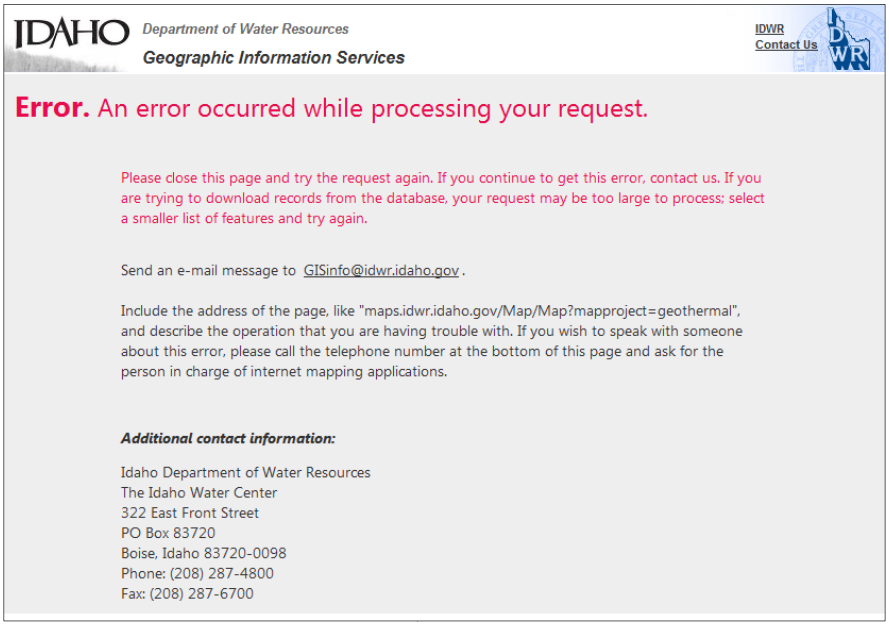
Numeric attributes may need to be re-formatted; the example shows before and after formatting.

	C	D	E	F	G
1	AgencyWell	AgencyWellName	WCWellID	USGSSiteID	ProductionRate
2	70	12S 46E 22DDC1	268031	4.22131E+14	35
3	581	IDEQ-GW-581	268044	--	0
4	3	16S 44E 13CAD1	268061	4.20205E+14	0
5	33	14S 44E 13CCC1	268077	4.21154E+14	50
6	1834	13S 44E 15DAD1	268111	4.21725E+14	20

	C	D	E	F	G
1	AgencyWell	AgencyWellName	WCWellID	USGSSiteID	ProductionRate
2	70	12S 46E 22DDC1	268031	422131111033201	35
3	581	IDEQ-GW-581	268044	--	0
4	3	16S 44E 13CAD1	268061	420205111152501	0
5	33	14S 44E 13CCC1	268077	421154111155701	50
6	1834	13S 44E 15DAD1	268111	421725111171601	20

Dates may be converted to an actual date object or returned as a string, depending on the database. This is the case with the ***ConstructionDate*** attribute in this table – the dates in this table look like "19840425," instead of 4/25/1984.

If an error occurs while downloading data, you will see the following page – you may see this when you try to download hundreds of records. If so, narrow your search and try again.

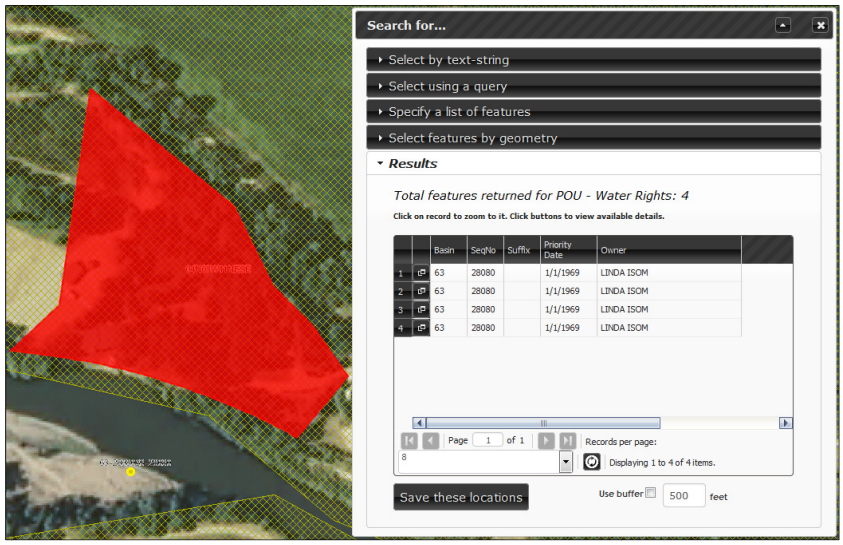


Use the Identify and Search Tools Together

As previously mentioned, the search layer can be any layer you choose; it does not have to be the active layer. For example, in several areas of the state, the **POU – Water Rights** layer (the cross-hatched area) covers the entire screen making it impossible to highlight a single place-of-use (POU). If you wish to highlight the place of use served by a specific water right you must do the following:

Make the **POU – Water Rights** layer active and use the *identify* tool to get the basin and sequence number for the desired point-of-diversion (POD), then use the query option of the *search* tool to find all places of use for that water right, e.g. where **BasinNumber = 63 AND SequenceNumber = 28080**.

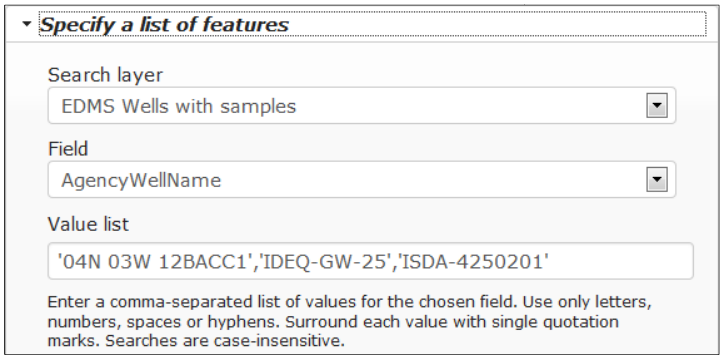
The place-of-use is now highlighted.



Search by Specifying a List of Features

This search is a very specific query, allowing only the "equals" comparison for each value specified in a list; it is only available for certain layers.

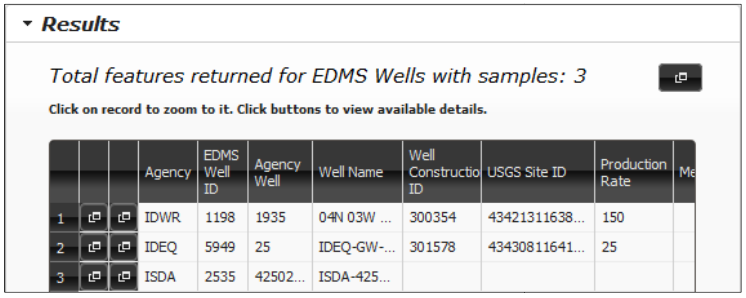
In this example, names of **EDMS** wells from three different agencies were specified – like '04N 03W 12BACC1','IDEQ-GW-25','ISDA-4250201'



Note that this *Results* pane has one button that was not present on the results shown for POD - Water Rights.

That button is displayed when the layer being queried can pass multiple IDs from this map to another query.

In this example, these Well IDs would be sent to an application that allows you to download water quality test-results for these three records.

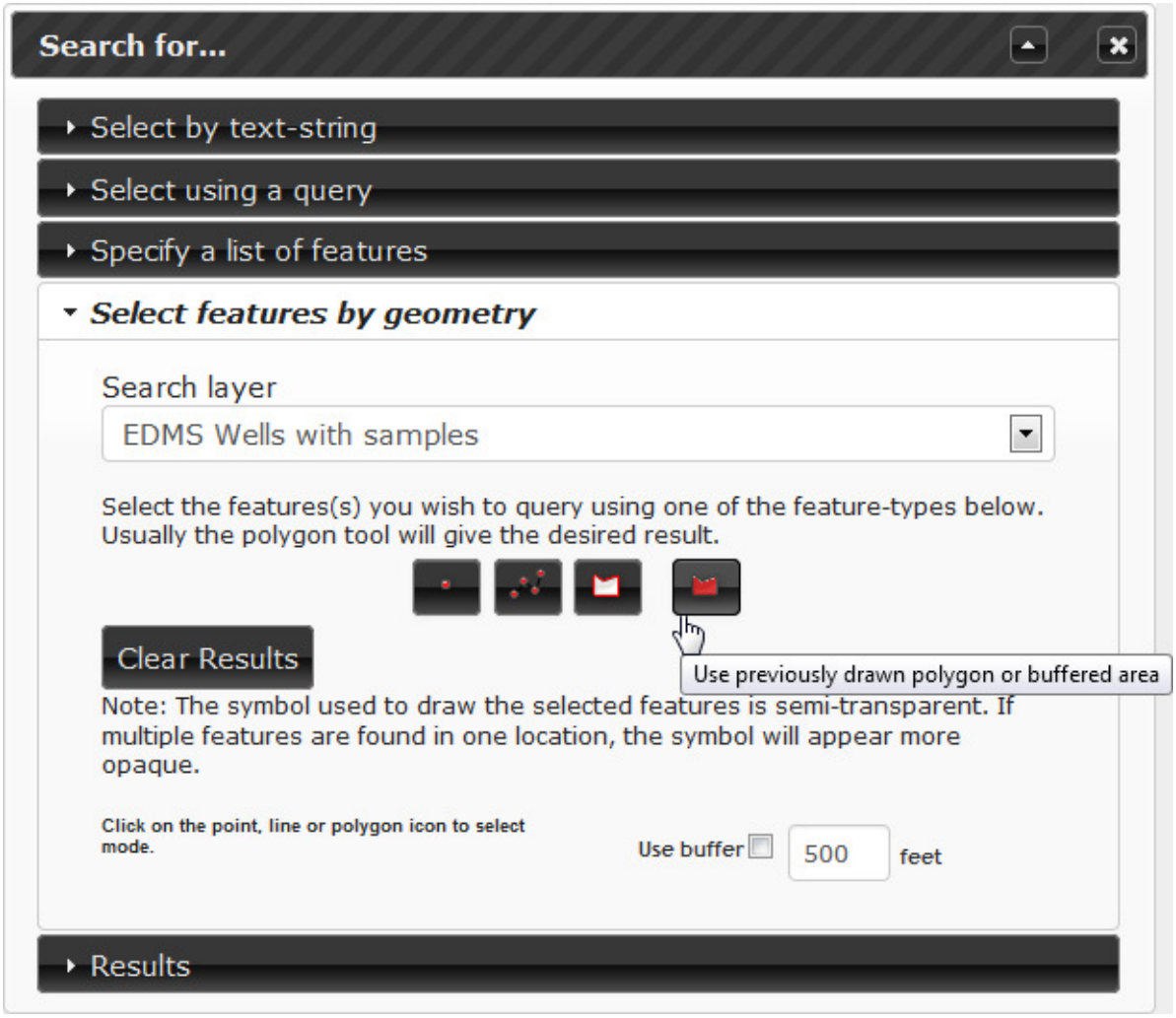


Search by Selecting Features (by Geometry)

You can select features by drawing a polygon around them. As previously mentioned, this tool is grouped with the search tools because it delivers the same kind of results, which allows you to view and

compare the *attributes* for several records at the same time. You can use a point, line or polygon to select features. For the most part, you will use only the polygon tool to select features.

If you have already drawn a polygon or created a buffer using points, lines or polygons, you have the option to use those areas for the query.



You have the option of buffering the area you select (or previously selected) by checking the "Use buffer" checkbox and entering an appropriate distance. The units-of-measure for this distance can be set in the *Options and settings* tool.

In the following example, the **EDMS Wells with samples** layer will be selected using the polygon-selection tool, which will create a list of well-sites for which water quality results can be obtained.

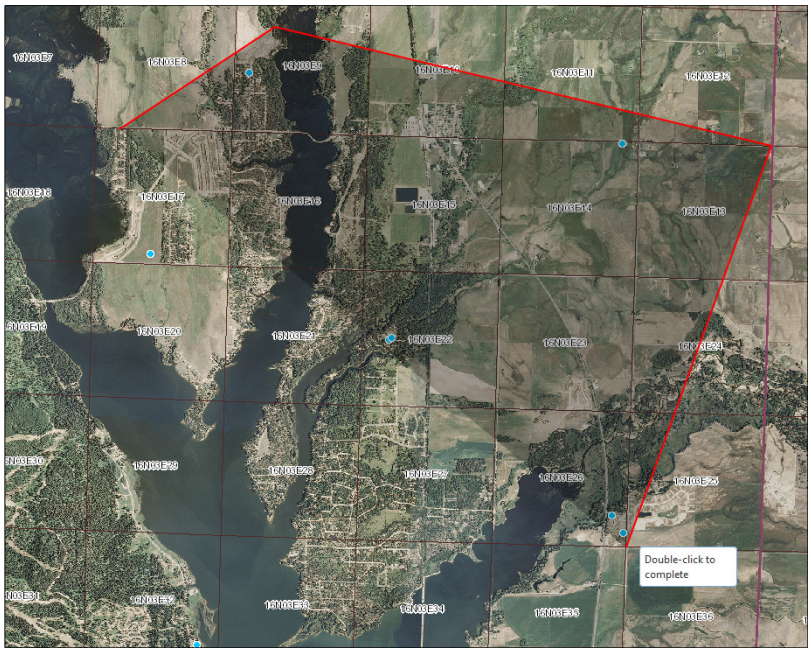
Select the *Select by polygon* button to begin the operation.
When you move the mouse over the map, you will see the tooltip "Click to start drawing." If you do not see that tooltip, select the polygon tool again.

Once you have clicked the initial point of the polygon, the tooltip will change to “Click to continue drawing.”

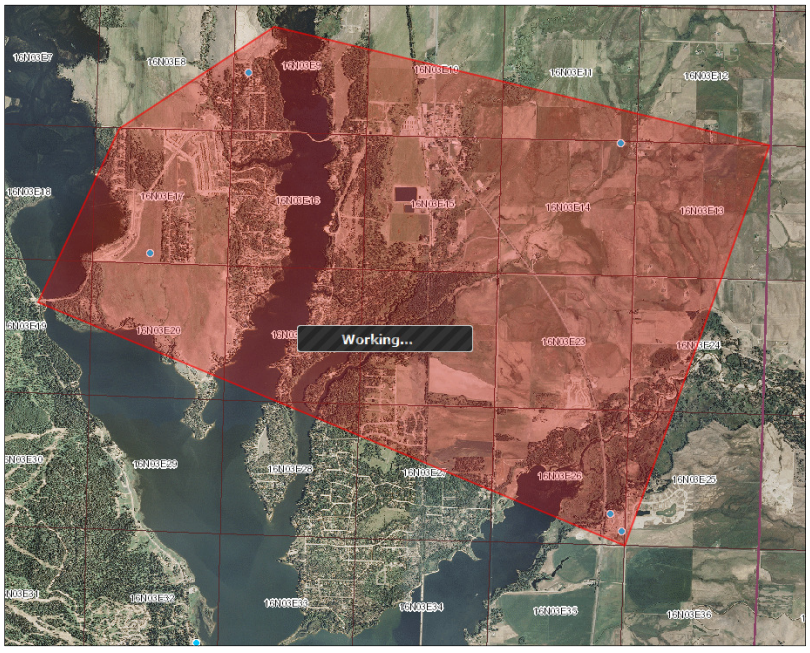
When you add a second point, you will see the “Double-click to complete” tooltip.

Double-click the mouse to finish selecting **EDMS** wells.

Note: If you see the progress bar before you have finished drawing the polygon, wait for it to disappear and continue drawing.



Your polygon will be highlighted and the map will be overlayed with a shadow to indicate that you cannot interact with it. You will see a progress bar and the message “Working…”



Once the wells have been located, the way in which the symbols representing the wells are drawn will change – in general, all selected points, lines or polygons will be highlighted using the appropriate symbol . Examples of the different types of “highlighting” for points was shown in an earlier figure. These highlights are shown in red. [If you have color diffecient vision, please refer to the section entitled ***Point-Symbols Used to Highlight Features.***]

The number of features selected will be reflected in the ***Results*** page of the *search tool*.

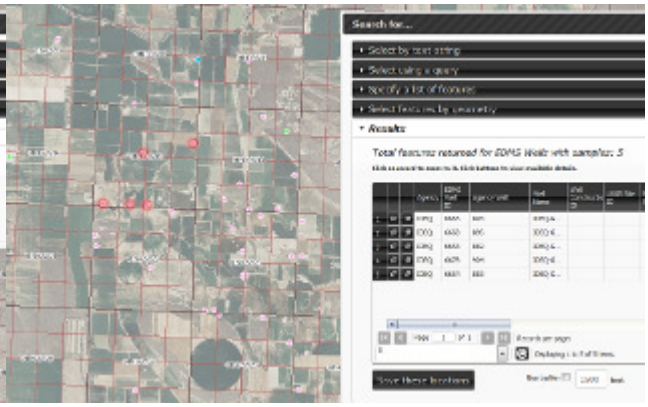
Using a Previously Drawn Polygon or Buffered Area

If you have already drawn a polygon or created a buffer using points, lines or polygons, you have the option to use those areas for the query. If you wish to buffer the area you are currently digitizing, you must set the "Use buffer" checkbox and the buffer distance before digitizing.

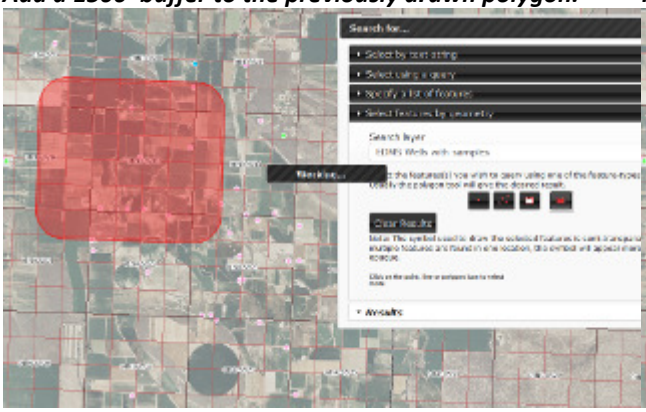
Examples of features selected using the polygon tool, buffered and non-buffered.

Select a polygon without a buffer.

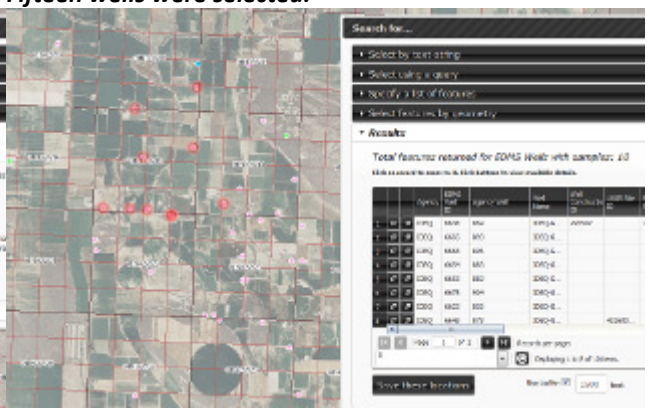
Ten wells were selected.



Add a 1500' buffer to the previously drawn polygon.



Fifteen wells were selected.



If you have already stored an area in the buffer you can reuse it to select features from the same layer or a different layer. This functionality is very useful for the following non-scientific senario:

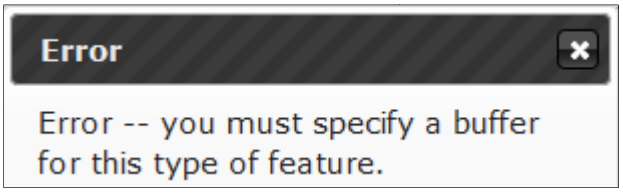
> You draw a polygon around an area and the *Results* pane says "No features found!" You return to the *Select features by geometry* pane and discover that the wrong layer-name is shown in the *Search layer* dropdown list. You fix this by selecting the correct *Search layer* and clicking the *Use previously drawn polygon or buffered area* button. You get the expected results.

Using the "Save these locations" button

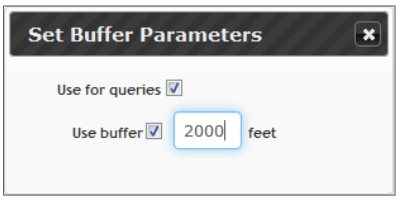
The *Save these locations* button activates a spatial tool; it does not save the database identifiers for the resultant features. It is used to save the area covered by those features. Those 'locations' must be areas. So, if the features are points or lines, you must specify a buffer in order to save the locations.

This method allows you to look at the relationship of the selected features to others in the same layer or explore the interaction between two feature-layers.

If you click the *Save these locations* button and the features are not polygons and not buffered, you will receive this message:

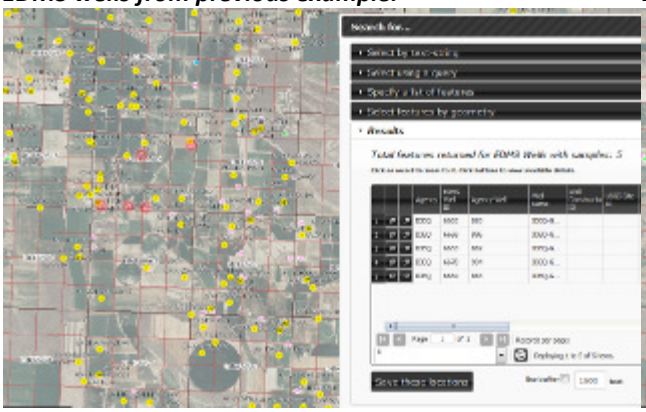


You can click the *Options and Settings* tool, select the *Set Buffer Parameters* option and set the buffer you wish. Close this popup and then click the *Save these locations* button.

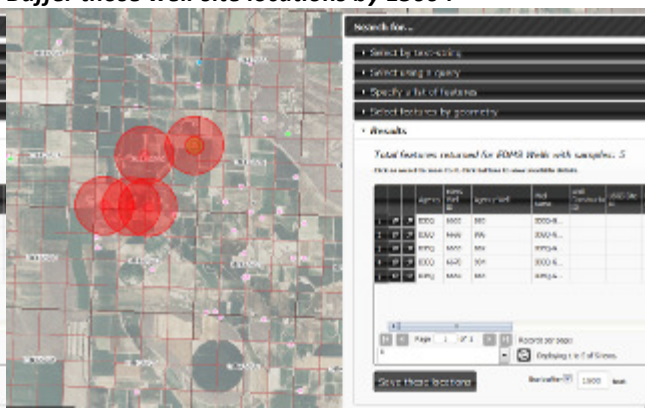


Example showing selection of water rights based on location of previously selected EDMS wells.
This example shows how the user would go about finding water rights near **EDMS** wells. This would be useful if a water-quality issue was raised.

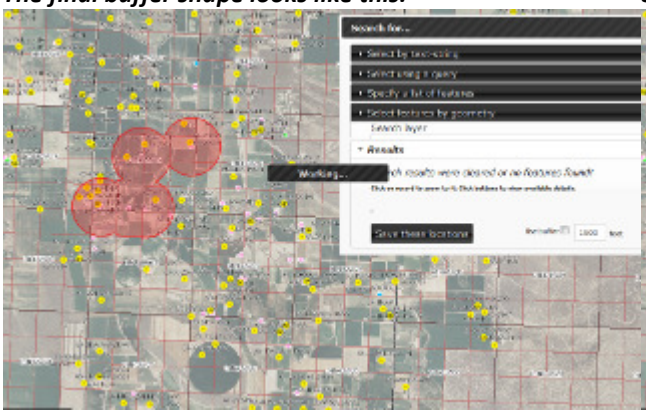
EDMS wells from previous example.



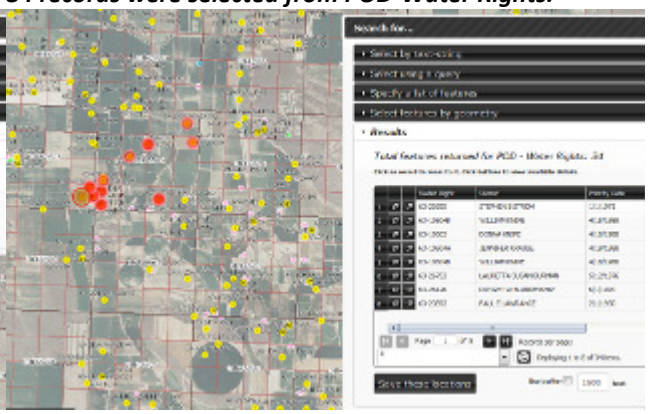
Buffer those well-site locations by 1500'.



The final buffer shape looks like this.



34 records were selected from POD-Water Rights.



Using Found Locations

The final way to create a buffer is to do so from the *Find a location by…* tool.

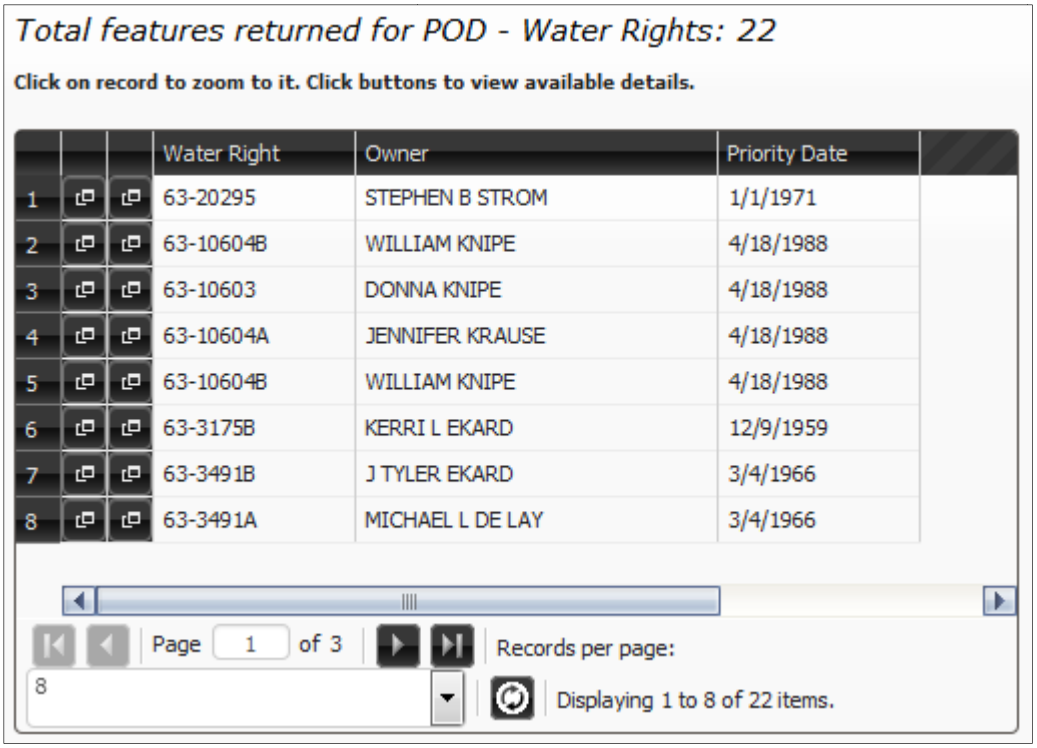
If you search for a legal description or tax parcel, for example, you can select features based on that location. But, you must check both the "Use for queries" checkbox before you click the button to find that location.

If the location is a point or line (coordinates, address, water right or stream name), you must check the "Use buffer", as well.

Results of Search

Each feature discovered by the search is drawn on the map with its proper symbol and then highlighted with a semi-transparent circle. The results of the search (by text, query, list or geometry) are displayed in a table.

This table behaves much like an electronic spreadsheet. You can sort on a column's contents by clicking on the column header. You can resize columns by "clicking, holding and dragging" the column separator between it and the next column, to the right. The pagination controls allow you to navigate by page or move to the first or last page.



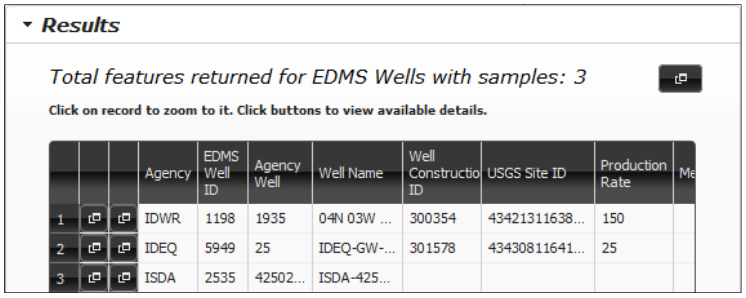
As explained previously, hovering over a row in the results grid highlights (with a large semi-transparent ring) the site detailed in that record.

Use these Features in Advanced Queries

The locations of these features can be used to search other feature layers.

That button is displayed when the layer being queried can pass multiple IDs from this map to another query.

In this example, these Well IDs would be sent to an application that allows you to download water quality test-results for these three records.



Using These Results

There are a number of reasons for using the search-capabilities of this application. If the layer you are searching is the primary layer for the application, in this case **EDMS Wells with samples**, you will be presented with a *Select these* button. If you click that button you will be see the pop-up window with the previously explained options to modify the set of chosen sites.

Downloading Data

Downloading results from a table

If you wish to download the records shown in the table, refer to the section entitled ***Downloading Feature Attributes***.

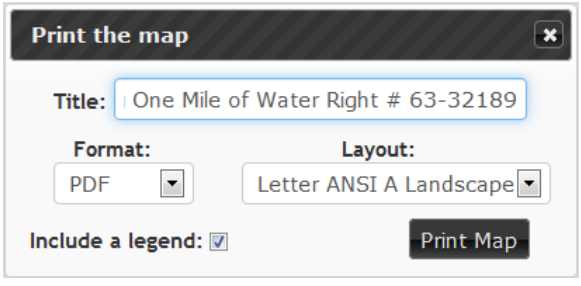
Downloading a shape-file

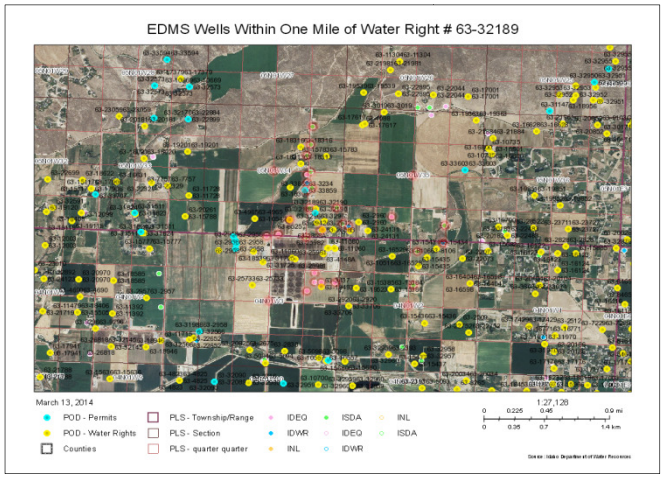
See the sections entitled ***Download entire layer*** *and* ***Clip and download*** for instructions on how to use the tools.

Saving or Printing the Map

Use the *Create an image from the map* ("screen shot") tool to create a PNG-formatted image of the current map contents. This is useful for capturing the map-image for use in "slide presentations."

Use the *Print the map* tool to create a map, complete with legend, scalebar, creation date and a user-supplied title. The title entry and selection of output parameters is made from the dialog which pops up when you click the *Print the map* button.

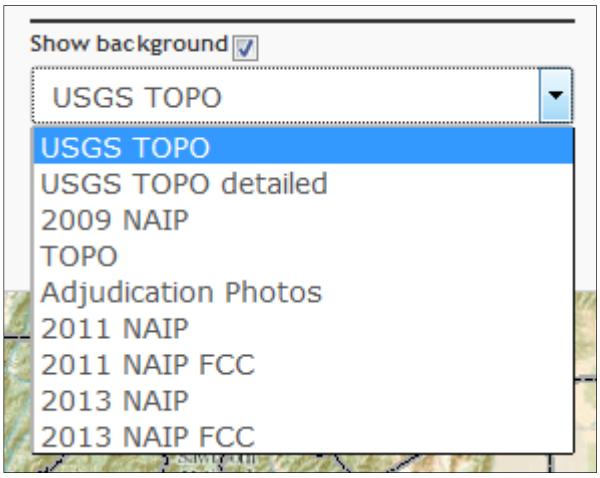




Layer-transparency is properly printed in Firefox and Chrome browsers. Note that if a large number of layers are shown on the map, there may be too much information to show in the legend.

Changing Backgrounds

The imagery used as a background for the maps can be changed to any of those available from the ***Map Contents*** dialog. These datasets are hosted on the IDWR's servers, those of the State's universities and the U.S. Geologic Survey. Some of these layers are not visible at all scales. For example, the **TOPO** layer is available when the map's scalebar shows a number smaller than 4,540 meters and the **2009 NAIP** is visible only when that value is smaller than 13,000 meters.



The **USGS TOPO** is the default background image; it is a modern topographic map, showing major rivers and major roads and coarse contour lines. It is visible until the map's scalebar shows a number smaller than 460 meters. The **USGS TOPO detailed** layer shows streets, creeks and canals, etc. It is available when the scalebar shows a value of 320 meters, or less – note, there is a gap between those two layers where no image is available. The **TOPO** layer shows historical topographic maps.

The **NAIP** layers are aerial photography in true-color and false-color (FCC, near infrared) versions for multiple years. The **Adjudication Photos** layer was composed for the IDWR's adjudication efforts.

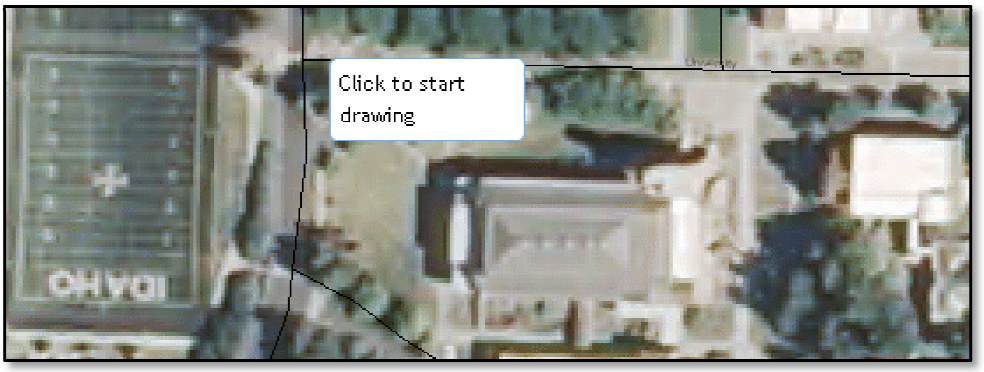
Limitations

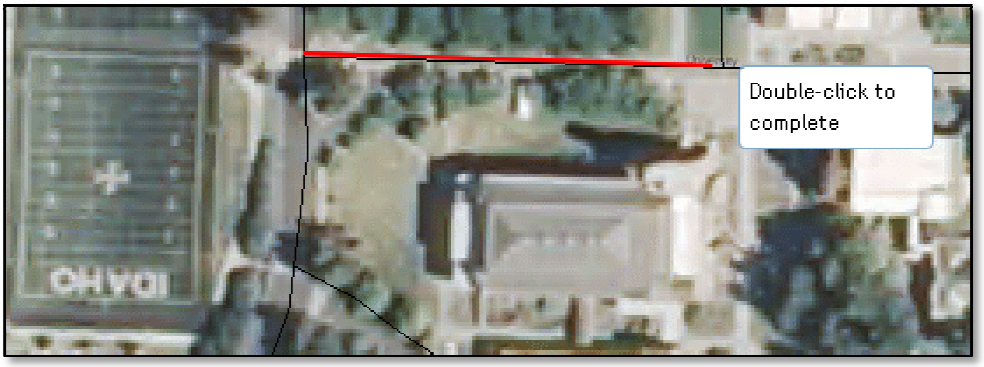
There are limits set on the number of records returned from the queries due to networking and hardware considerations. You will be able to see as many as 1000 records resulting from your search. Selection of EDMS wells is currently limited to 200 sites.

The number of records allowed in a single download may be limited due to other configuration parameters, based on the target layer. You can download as many records as you wish but not "all at once." You must manage the sites you select to stay within those limits.

Appendix – Measuring Distances

Measure an area or distance (length) by clicking the *measure* tool and selecting the proper option. Tooltips guide you through the process. This tool operates exactly like the tool used to *select features by geometry*. The measurement is displayed when you double-click the map.





Handling Errors

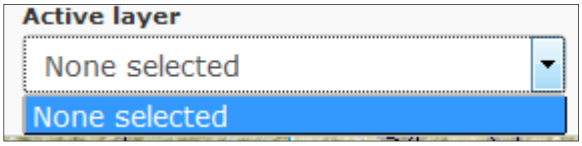
List of Layers in Table of Contents is Incorrect

If you try to use the *Change layers* tool before all of the map services have loaded, the layers listed in the *Map Contents* may be blank. Close the dialog and wait for the "Working…" message to disappear. Then, open the dialog. If it is still blank, click the *Refresh layer list* button.

No Layers in List of Possible Active Layers

The layer you are interested in may not be "queryable" because only those layers for which queries have been attached to the map can be selected as the active layer.

If you try to change the active layer and see that "None selected" is the only value in the list, click the checkbox on the map service you are interested in (make the checkbox empty) and then click it again to set the checkmark. That should make the "queryable" layers in that map service appear in the drop-down list.



The ProgressBar is Present After All Layers Have Loaded

If the *ProgressBar* remains on the page long after all layers have loaded, pan or zoom the map. That should reload the visible map and turn the message off.

If the Application is not Working

Do not use the "Back" button on your browser. It will not fix the problem. Instead, click your browser's "Refresh" button. It may look like or . The map will be reloaded. If it still does not work, try again in a few minutes or contact us using the instructions provided in Contacting IDWR.

Final Thoughts

Cookies

The information collected from one page to another is stored in local storage on your PC, Mac or hand-held device. You must have cookies enabled in order to use this application. Although you may use the browser's "Back" button to go the previous page, you may cause the application to loose any selections you made on the page you are leaving.

Contacting IDWR

If you have any problems with this application, or have questions not answered by this document, you can contact the IDWR using the information shown below. Please provide the address of this web-page – it will be something like http://maps.idwr.idaho.gov/Map/Map.

Please include your telephone number and browser name/version when requesting assisstance. Comments on how to make this application better are welcome, of course.

For comments and questions concerning this application, or any of the IDWR's interactive maps, send an e-mail message to GISInfo@idwr.idaho.gov or call the telephone number shown below:

Idaho Department of Water Resources
The Idaho Water Center
322 East Front Street
PO Box 83720
Boise, Idaho 83720-0098
Phone: (208) 287-4800
Fax: (208) 287-6700

Appendix – Glossary

The following list of terms is for those of you who are not familiar with internet mapping applications.

General Terminology used in GIS

GIS – Geographic (or geographical) Information System. The GIS ties IDWR data – wells, water rights, etc. – to locations in Idaho. The use of GIS allows data from dissimilar layers to be analyzed against each other.
Attribute – a characteristic of the data; a value from one of the columns/fields in the database.
Active layer – the layer used when identifying features on the map. This layer is selected from the ***Layers*** menu.
Buffer – an area surrounding a point, line or polygon that describes the extent of an item in the IDWR's GIS. It is defined as a polygon, the points of which are set at a minimum distance from the point, line or boundary of another feature. E.g. "the area within 1000' of this well"
Extent – the scope or limit of the geographical area, usually expressed as coordinates, using IDTM.
Feature – a point, line or polygon that describes the extent of an item in the IDWR's GIS.
Layer – a collection of features of the same type, e.g. streams.
IDTM – Idaho Transverse Mercator is the official coordinate system used to exchange geographic information within the state.
Map Service – a collection of GIS layers pertaining to the same type of business, e.g. the ***RiversAndLakes*** map service contains many surface-water layers.

Terms Specific to the Map

Map – the portion of the display used to emulate a paper map.
Navigation – the act of sizing or repositioning the content of the interactive map.
Click – press the mouse button (usually the left button). This application does not provide any functionality to "right-clicking."
Drag – press and hold the mouse button while moving the mouse. The only use for this (in this application) is as a short-cut to zoom to a specific portion of the map.
Hover – mouse your mouse cursor over an area of the map, icons or menus in order to see more information about that item.
Rubber-band box – if you use the ***Shift*** and ***Ctrl*** keys while dragging the mouse you will see a rectangular overlay showing the extent of the area which will be operated on. Used for navigation or feature selection.
Zoom in – view a smaller portion of Idaho (magnify).
Zoom out – view a larger portion of Idaho (minify).
Pan – reposition the map by dragging it in any direction.
Tooltip – small text-boxes which become visible when you place your mouse cursor over certain components.
Map scale – the approximate scale of the map, given as a ratio, e.g. 1:24000. The larger the number on the right-hand side of the scale, the smaller the scale.